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BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER
LABUD, JONATHAN R

ART UNIT	PAPER NUMBER
2192	

MAIL DATE	DELIVERY MODE
10/21/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,11,12 and 21-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,11,12 and 21-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to Applicant's amendment dated June 15, 2009,

responding to the April 9, 2009 Office Action provided in the rejection of claims 1-20, wherein

claims 1 and 11 have been amended, claims 2, 4-10 and 13-20 have been cancelled, and new

claims 21-25 have been added.

       35 USC 101 rejections of claim 1-10 are withdrawn in view of the applicant's

amendment to the claims.

       Claims 1, 3, 11-12 and 21-25 remain pending in the application and have been fully

considered by the examiner.

Examiner Notes

2.   Examiner cites particular paragraphs or columns and lines in the references as applied to

the claims below for the convenience of the applicant. Although the specified citations are

representative of the teachings in the art and are applied to the specific limitations within the

individual claim, other passages and figures may apply as well. It is respectfully requested that,

in preparing responses, the applicant fully consider the references in entirety as potentially

teaching all or part of the claimed invention, as well as the context of the passage as taught by

the prior art or disclosed by the examiner.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 1, 3, 11-12 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable

over IBM Technical Disclosure Bulletin (Software Path Coverage Measurements) (Hereinafter

IBM) in view of Mann, Daniel P. (U.S. 6,094,729) (Hereinafter Mann).

As per claim 1, IBM discloses a method comprising:

executing a target program via a central processing unit (CPU), the target program to

include a plurality of branches and to be executed in a virtual machine (see for example, page 1

lines [24-30 and 39-40] and page 2 lines [27-28], this limitation is disclosed such that a program

with branches is executed in a VM system which has a host processor);

an information collection module (ICM), wherein the ICM is part of a virtual machine

monitor that is coupled to the virtual machine to collect code coverage information about the

target program (see for example, page 1 lines [30-33], this limitation is disclosed such that a

tester (ICM) which is part of a passive monitor (virtual machine monitor) collects code coverage

information about the software being tested);

recording a branch address when the ICM is notified one of the plurality of branches is

taken (see for example, page 1 lines [26-30] and page 2 lines [12-17], this limitation is disclosed

such that a signal indicates a need to record a memory address which has just changed, i.e. "a branch was taken");

storing the recorded branch addresses in memory (see for example, page 2 lines [12-17], this limitation is disclosed such that the memory address execution path (branch addresses) is stored in memory);

determining code coverage of the target program based on the branch addresses stored in memory (see for example, page 2 lines [25-28], this limitation is disclosed such that addresses stored in memory are used for code coverage measurement of the program being tested).

Although IBM discloses path coverage to include when "a branch was taken" (see above), it does not explicitly teach configuring the CPU to notify an information collection module (ICM) via an interrupt when a branch occurs (i.e. specified condition).

However, Mann discloses configuring the CPU to notify an information collection module (ICM) via an interrupt (see for example, Figures 1-2 and associated text, this limitation is disclosed such that trace control circuitry 218 interfaces with CPU 104 to configure it for software execution tracing. CPU debug port 100 supplies commands (interrupts) to start capture of software execution trace records in trace buffer 200 (information collection module)) when a branch occurs (see for example, column 2 line [65] - column 3 line [9], this limitation is disclosed such that notification occurs when the CPU signals the occurrence of a specified condition (i.e. branch taken) emphasis added)l.

IBM and Mann are analogous art because they are from the same field of endeavor, software testing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method as taught by IBM by configuring a CPU as taught by Mann because it would provide an effective means of selectively activating and deactivating trace functionality (see for example, Mann column 6 lines [17-24]).

As per claim 3, IBM discloses providing the recorded branch addresses to a coverage pattern generation module (CPGM) to interpret and display code coverage statistics (see for example, page 2 lines [26-35], this limitation is disclosed such that a test unit (coverage pattern generation module) uses recorded address traces (branch addresses) to debug and display code coverage measurements (statistics)).

Regarding claim 11, it is an article of manufacture claim having similar limitations cited in method claim 1. Moreover, all actions of the method disclosed in the rejection to claim 1 are performed by a means (see for example, IBM page 1 lines [21-24]). Thus, claim 11 is also rejected under the same rationales as cited in the rejection of claim 1.

Regarding claim 12, it is an article of manufacture claim having similar limitations cited in claim 3. Thus, claim 12 is also rejected under the same rationales as cited in the rejection of claim 3.

As per claim 21, IBM discloses the limitation wherein the CPGM comprises a graphical user interface (GUI) to accept a source file of the target program and the recorded coverage statistics (see for example, page 2 lines [28-35], this limitation is disclosed such that the tester unit (CPGM) can allow users to interact with displayed menus (GUI) in order to utilize the program code and trace data file).

Regarding claim 22, it is a method claim having similar limitations cited in claim 21.

Thus, claim 22 is also rejected under the same rationales as cited in the rejection of claim 21.

Regarding claim 23, it is a system claim having similar limitations cited in method claim

1. Moreover, all actions of the method disclosed in the rejection to claim 1 are performed by a

system (see for example, IBM page 1 lines [39-40]). Thus, claim 23 is also rejected under the

same rationales as cited in the rejection of claim 1.

Regarding claim 24, it is a system claim having similar limitations cited in claim 3.

Thus, claim 24 is also rejected under the same rationales as cited in the rejection of claim 3.

Regarding claim 25, it is a system claim having similar limitations cited in claim 21.

Thus, claim 25 is also rejected under the same rationales as cited in the rejection of claim 21.

Response to Arguments

5.   Applicant's argument with respect to 35 USC 101 rejection of claims 1 and 3 has been

considered, and 35 USC 101 rejections of claims 1 and 3 are withdrawn in view of the

applicant's amendment to the claims.

Applicant's arguments with respect to prior art rejections of claims 1, 3, and 11-12 have

been considered but are moot in view of the new grounds of rejection.

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Labud whose telephone number is 571-270-5174. The examiner can normally be reached on Monday to Friday 6:30 AM to 4:00 PM.

If attempts to reach the above noted Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached at the following telephone number: (571) 272-3695.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 13, 2009   /Tuan Q. Dam/
/J. R. L./   Supervisory Patent Examiner, Art Unit 2192
Jonathan Labud
Examiner Art Unit 2192